

# FOLIO

## University Research Prizes Awarded

Werner Israel, Professor of Physics, and Norman Page, Professor of English, are the 1983 recipients of The University of Alberta Research Prize. The prestigious award is sponsored jointly by the University and the Association of the Academic Staff of The University of Alberta. Originated last year, the prizes are awarded for excellence in research and scholarship. One of the prizes rewards outstanding work in the general area of humanities, social sciences, law, and the fine arts (an area defined by funding support from the Canada Council and the Social Sciences and Humanities Research Council); the other recognizes research contributions in the sciences and engineering (an area funded by the Natural Sciences and Engineering Research Council or by the Medical Research Council).

Dr. Israel is a native of South Africa. With degrees from the University of Cape Town (BSc 1951; MSc 1954) and Trinity College, Dublin (PhD 1960), he joined the Department of Mathematics at this University in 1958, moving to the Department of Physics in 1972. He is a Fellow of the Royal Society of Canada and the 1981 recipient of the C.A.P. Medal of Achievement in Physics.

Norman Page was born and raised in England. A graduate of Cambridge University (BA 1951; MA 1955) and the University of Leeds (PhD 1968), he immigrated to Canada in 1969. Also a Fellow of the Royal Society of Canada, Dr. Page was awarded a prestigious Guggenheim Fellowship in 1979. He has been on staff in the Department of English at The University of Alberta since 1969.

The research prizes will be presented on 30 March at a special presentation ceremony beginning at 8 p.m. in SUB Theatre. Each recipient will receive a cheque for \$2,500 and will each present a general lecture. Dr. Israel will speak on "Black Holes"; Dr. Page has taken as his topic "The Facts of a Life; Reflections on Literary Biography." Profiles of the recipients follow.

When Werner Israel was eleven year old, he took from the shelf of the South African Public Library a book on astronomy. Then and there, he was hooked. "The book was called *The Internal Constitution of the Stars*," Dr. Israel recalls. "I was absolutely fascinated that one could discover all these marvellous things about the stars without ever actually going to them and looking inside."

Dr. Israel began the pursuit of his childhood passion by teaching himself calculus at the age of twelve. And he withstood the discouragement of friends and colleagues who warned him away from astronomy because it "wouldn't pay." Now, some forty years after that memorable trip to the Cape Town library,

Werner Israel is recognized across continents as one of the most respected and important theoretical physicists of the day.

His career is an interdisciplinary one. Unable, originally, to pursue astronomy (there were no courses available at the University of Cape Town), Dr. Israel found himself "drifting" into applied mathematics and theoretical physics. It was his developing interest in applied mathematics that eventually brought him (in the late '50s) to The University of Alberta. Max Wyman (who was to become President of the University in 1969) was making a name for himself in the field. "Wyman was here, in Alberta," explains Dr. Israel, "and he simply drew me like a magnet." Gradually his re-

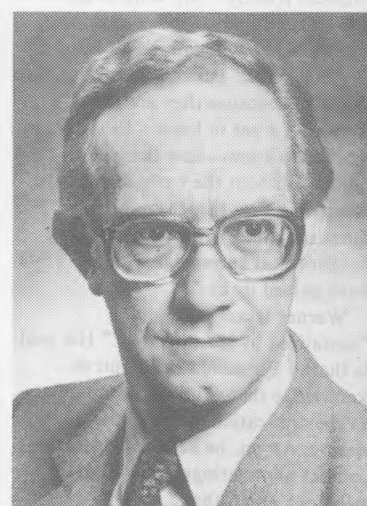


Werner Israel

search interests jelled. Applied mathematics, theoretical physics, and astronomy came together in the study of astrophysics; for many years now, his research has been concentrated on the properties of matter inside stars, and the interrelation between space, time, and matter. In particular, Dr. Israel has become a world authority on "black holes."

In 1931 (for those who believe in the significance of coincidence, 1931 was the year in which Dr. Israel was born), it was first discovered that there exists an upper limit to the mass of a cold body in equilibrium; that when a star heavier than two solar masses cools down it will no longer be able to support itself against gravity and must, therefore, collapse.

According to Dr. Israel, two distinct theories can be applied to this discovery. Newton's Theory of Relativity predicts that the star in question will collapse to a state of infinite density (known in scientific jargon as a "naked singularity"). Such a state would be accompanied by the radi-



Norman Page

ation of an infinite amount of heat. Einstein's Gravitational Theory, on the other hand, offers the possibility of a less drastic outcome: a stable "endstate" which coexists peacefully with its environment. This endstate is known as a "black hole," a term coined by nuclear physicist John Wheeler in 1969.

It is the black hole that has captured Dr. Israel's scientific imagination. It is the black hole that has lured him on to engage in profound research. His discovery of the "event horizon" theorem (which defines the boundary of the black hole) has given an entirely new perspective to the problem of gravitational collapse. His work on the "no-hair" theorem (which defines the properties of the surface of the black hole) stands as one of the most precise discoveries in theoretical astrophysics. In sum, his research into the properties of the black hole has brought him world-wide acclaim and not just a little personal satisfaction.

Do black holes exist? "Probably, al-

though we can't really prove it." Are they really responsible for the Bermuda triangle? Can they solve man's quest for unlimited energy, waste disposal, time travel? "Science fiction, pure and simple," comes Dr. Israel's answer.

What, then, is the attraction? What drives this man to devote himself to something that can't be proved, something that appears to have little "practical" value?

Firm in his belief in the importance of basic research, Dr. Israel answers frankly: "My work in astrophysics is pure, fundamental research. Some will call me an ivory tower scientist. Perhaps I am. I pursue questions because they are there, because I want to know—have always wanted to know—how the world works. Without the basic scientist struggling with these very critical questions, ninety-five percent of our fundamental knowledge would have passed us by."

Werner Israel is a man "tantalized by the unknown." His goal is that of Einstein: the pursuit of knowledge that will lead, ultimately, to the unification of the forces of nature. As yet, he acknowledges, there are but glimmerings. "But I have a wild idea about that," he says, eyes lighting up. "Something that came to me the other night, something I'll have to work on..."

Far from the world of Werner Israel, from theoretical astrophysics

and the intriguing unknown of the black hole, is the world of Norman Page. His is a world of words, of language and literature, of Charles Dickens, Thomas Hardy, and Jane Austen. Yet the similarities are there. The challenge of a problem; the systematic, disciplined approach.

For Dr. Page, whose research has gained him universal recognition as a leading scholar of British novelists of the 19th and 20th centuries, the challenge began with stylistics, the language of literature. "It was a relatively neglected area at the time," he explains, referring to the early 1960s. "There had been a great deal of work done on poetry, but very little done on the language of prose. And for obvious reasons. It is far easier to deal with the language of a sonnet than a 900-page novel."

Undeterred by the enormity of the problem, Dr. Page began with a study of the language of Charles Dickens, in his mind the greatest of all novelists. "It seemed extraordinary to me that Dickens had been dead for nearly 100 years and yet nobody had looked really carefully and thoroughly at the language of his novels." This Dr. Page did, and it was to be the first in a series of encounters with the lives and works of some of the great Victorian novelists.

It was the study of Thomas Hardy that led him into the realm of biography. On discovering that no one had ever prepared a satisfactory account of Hardy's life, he began to explore the reasons for this lack of biographical information. "Many writers hold the view that it is one thing to give their works to the world, but quite another to expose their private lives." Some, like Hardy, carefully and systematically "cover their tracks."

What is the value of a biography? Is a knowledge of Charles Dickens the man important to an understanding of Charles Dickens the writer? "There still exists the school of thought that biography is irrelevant," answers Dr. Page. "But I don't believe that. The life of a writer very often provides the key to his writing."

Over the years, Dr. Page's research into the lives of numerous British novelists (among them Jane Austen, E.M. Forster, A.E. Housman, and Alfred, Lord Tennyson) has provided him with important insights

into novelists and their writings: ● Hero worship can suffer. "Many people have real difficulty with Thomas Hardy, for example. In some ways he was a very small-minded person. He could be mean and he could be petty. And yet he was a great writer." ● Writers cannot be reduced to a formula. "One of the first things that I learned about biographies was that writers are very complex and must not be oversimplified in order to fit a particular theory." ● Writing novels is extraordinarily hard and painful work. "Take Conrad: he virtually had a breakdown when he finished each novel. Getting the words on paper was a terrible experience for him." ● In order to take contemporary literature seriously it must be compared to the great writings of the past. "If it is good, it will bear comparison with the best of the past."

Thus far, Dr. Page has concentrated his research on "the best of the past." And, while he admits to an interest in writing about a living author ("just for the challenge of finding out how it should be done"), he intends to concentrate his re-

search efforts on new approaches to dealing with the biographical form, new ways of "performing the task."

Werner Israel believes that a study of the unknown can provide a key to our past. Norman Page believes that a study of that past is equally important. He discounts any suggestion that the study of literature is of less value than research in the "hard" sciences. "Works of literature are one of the monuments of any civilization," he states without hesitation. "They have to be respected along with scientific discoveries. To study these in a systematic, disciplined way is as valid as anything else."

Larkin Kerwin, President of the National Research Council of Canada, stated in his recent address to Convocation that "research is the effort of curious intelligences to seek the most detailed possible descriptions of mankind, the universe, and the interactions of the two. This is what defines a university." Werner Israel and Norman Page, research scholars of the highest order, add much to that definition. □

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## MBA Forum to Serve up Devine Dinner

Grant Devine, Premier of Saskatchewan, will give the keynote address at the 1983 MBA Dean's Forum, to be held on 21 March at the Four Seasons Hotel.

Mr. Devine, who led the Progressive Conservative Party to an upset victory in the general election of 1982, will speak on "The Saskatchewan Perspective."

The dinner, sponsored each year by the University's Faculty of Business, will begin at 7:15 p.m., preceded by a cocktail hour at 6:15 p.m. Tickets for the dinner are \$30 and are available to interested members of the public from Tom Collier, Faculty of Business, telephone 432-4693. □

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## University Swim Team Ranks 2nd in Canada

Outstanding performances by both the men's and women's swimming teams have placed the over-all University of Alberta team second in the country. The successful swimming season culminated in the recent CIAU National Championships, held at the University of Sherbrooke 4 to 6 March.

Competing against teams from twenty-two other Canadian universities, the men's team placed second in the swimming and third in the

combined swimming and diving events. The women's team reversed that order, placing third in the swimming and second in the combined events.

Perhaps the most outstanding individual effort, according to John Hogg, head swim coach, was that of Cameron Henning in the 200m backstroke. His winning time of 2:00.80 broke the Canadian National Record. □

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## Library to Begin Self-Study of its Collections

The University Library is embarking upon an assisted self-study: the Collection Analysis Project (CAP), developed by the Office of Management Systems of the Association of Research Libraries, of which the University Library is a member. This process is similar in intent to PACCR self-studies in which other University departments and Faculties are engaged.

The CAP was developed in response to concerns raised by North American academic and research libraries in the late 1970s. The volume and the cost of published material had increased dramatically, while funding for library materials stabilized, and it became apparent that libraries could not acquire all relevant material. The CAP procedure was tested at the Massachusetts Institute of Technology, the University of California/Berkeley, and Arizona State University in 1977-78, and the revised CAP has been undertaken by several major university research libraries in the United States and, in Canada, by McGill University and the University of British Columbia.

In January 1983, the Chief Librarian appointed a study team consisting of Jeanette Buckingham, Madge MacGown, Olin Murray (Chairman), Doug Poff, Sieglinde Rooney, and Margo Young. From 1 to 3 February, Jeffrey C. Gardner, one of

the authors of the CAP procedure, conducted an intensive orientation.

The key purpose of CAP is to ensure that our library collection and all operating practices that affect it are adequate to meet both current and future demands. In particular, the CAP study team will analyse and make recommendations on collection development policy; the administrative and staff organization needed for effective collection development and maintenance; guidelines for the assessment of collections; guidelines for the preservation of collections; guidelines for automation as it affects collection development and maintenance; and guidelines for giving an appropriate priority to collection development.

A preliminary report, scheduled for early autumn, will provide the context for the main study. First, there will be a description of the existing collection as it has evolved and as it might be projected to develop. This will be followed by a description of the collection's "environment", including external influences on the collection that have implications for its development, such as University programs and philosophy, funding of higher education and research, and the needs of the community beyond the University. A third chapter will examine existing Library goals and policies as they re-

late to collection development and maintenance.

The preliminary report will also define the roles of task forces that will be appointed next fall to examine identified areas of concern relating to collections. The study team will review task force reports, and the final report, with recommendations to the Chief Librarian, will be issued in the spring of 1984. The CAP study, for its year or more duration,

should focus the attention of all on the crucial importance of our collection and how it serves the needs of the University community.

The study process will depend on the assistance and advice of many people. The team will be consulting at all levels in the Library and the University. Those wishing to contribute their insights to the project are invited to contact any of the study team members. □

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## Jean Callin, 1924 - 1983

Jean Callin, long-time staff member of the Provincial Laboratory of Public Health, Southern Branch (Calgary), died on 10 February. She was 58.

Mrs. Callin joined the Provincial Lab in 1952 during its third year of operation. Save for one year when

she was employed at the Calgary General Hospital, she worked in the Media Department of the Provincial Lab for thirty years.

An active member of the Calgary community, Mrs. Callin will be missed by family and friends. □

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## Board of Governors

The Board of Governors meeting of 4 March placed the committee accent on the Educational Affairs Committee. (The Building Committee did not present a report; the Finance Committee sought and received Board approval of an increase of \$1 per term in the University Health Service fee, effective 1 July 1983. The increase will offset a "significant increase" in the cost of pharmaceuticals, and will help move the Health Service toward a break even position.) The Educational Affairs Committee reported the reappointment of E. Diener as Chairman of the Department of Immunology; the reappointment of K.D. Prithipaul as Chairman of the Department of Religious Studies; and the reappointment of H.D. Tichenor as Chairman of the Department of Industrial and Vocational Education. Each reappointment will commence 1 July 1983. Dr. Diener, who has been at the University since 1970, earned his PhD at Zurich. He has been Chairman of the Department of Immunology since 1973. His reappointment is for five years.

Dr. Prithipaul has been Chairman of the Department of Religious Studies since 1980. His first appointment to The University of Alberta occurred in 1968. Dr. Prithipaul is a graduate of the Sorbonne (PhD 1963).

Dr. Tichenor was also reappointed for three years. He has been on campus since 1964 when he was appointed Associate Professor of Industrial and Vocational Education. The University of Illinois granted Dr. Tichenor the EdD degree in 1967.

The Educational Affairs Committee also announced the appointment of L.J. White as Chairman of the Department of Computing Science for the period 1 March 1983 to 30 June 1987. Dr. White comes to the University from Ohio State University where he was Chairman of the Department of Computer and Information Science. He took his BS Electrical Engineering at the University of Cincinnati, his MS Electrical Engineering and his PhD, Electrical and Computer Engineering, at the University of Michigan.

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## "All the Things We Are"

In honor of the University's 75th Anniversary the Faculty of Physical Education and Recreation will hold an Open House beginning Friday, 18 March. The theme for the three-day event is "All the Things We Are."

Displays, tours, a dancefest, and a skating party will be included in the weekend festivities which begin at 2 p.m. on Friday in E-120 of the East Wing of the Physical Education and Recreation Centre.

More information on the Open House may be obtained by contacting Leslie Bella, Associate Dean of the Faculty, telephone 432-3341. □

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## Medical Anthropologist to Lecture

Barbara Kerewsky-Halpern, a medical anthropologist at the University of Massachusetts, will give a public lecture on ethno-medicine, human communicative behavior and trust relationships on 24 March. The lecture, "Talk, Touch and Trust: A Cross Cultural Perspective," will start at 4 p.m. in the amphitheatre of the University of Alberta Hospitals.

On 25 March at 1 p.m. in the amphitheatre, and on 26 March at 10:30 a.m. in 3-117 Fine Arts Centre, Dr. Kerewsky-Halpern will lend her expertise to sessions designed for multiple sclerosis patients, their families and helpers. □

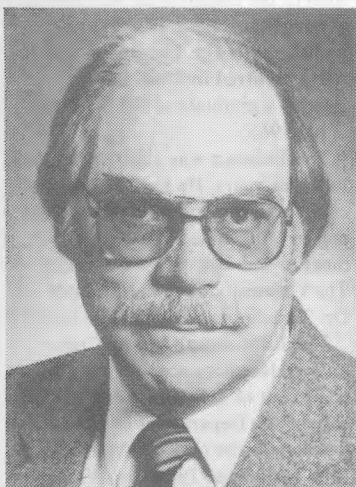
Dr. White's current research concerns software engineering, particularly computer program testing; data structures and algorithm analysis; and techniques in information storage and retrieval.

He joined Ohio State University in 1971, was appointed Professor of Computer and Information Science and Electrical Engineering in 1978, and took up the chairmanship of the department a year later. From 1977 to 1980, in the capacity of consultant to the Monsanto Mound Research Laboratory, he conducted statistical analyses of digital simulation for nuclear material control.

Dr. White belongs to the Institute of Electrical and Electronics Engineers (IEEE), the IEEE Computer Society, the Association for Computing Machinery, and the Society of the Sigma Xi.

#### *New Dean of Agriculture and Forestry*

Roy T. Berg will assume the duties of Dean of the Faculty of Agriculture and Forestry on 1 July 1983. Dr. Berg, who received his baccalaureate from this University and his graduate degrees from the University of Minnesota, will hold office for an initial term of five years.



Dr. Berg was first appointed to The University of Alberta in 1950. He is currently Chairman of the Department of Animal Science; his research interests relate to improving the breeding and management of livestock for meat production. On this topic, he has published more than 120 scientific papers, some 200 exten-

sion papers, and a number of newspaper and magazine articles. Dr. Berg is co-author of *New Concepts of Cattle Growth*, a book that has sold out twice and been translated into at least three languages.

A variety of professional and scientific organizations number Dr. Berg in their membership rolls. He has served as President of the Canadian Society of Animal Science and the Alberta Institute of Agrol-ogists, and as Director of the Agriculture Institute of Canada. He has been awarded a Fellowship in the Agricultural Institute of Canada and in 1981 was presented with the Canadian Animal Breeder's Medal for excellence in Animal Breeding Research.

#### *Graduate Studies and Research*

The Governors were in receipt of a two-part report prepared by Vice-President (Research) Kaplan and the Acting Dean of Graduate Studies and Research, S.B. Woods. The basis for the report was the Board's October 1981 request that its Academic Concerns Committee (now Educational Affairs Committee) "prepare a report, in consultation with the Vice-President (Research), the Dean of Graduate Studies and Research, and other appropriate parties, on the status of research and graduate studies in the various sectors of the University, and make recommendations upon how we can build our graduate school to be one of the top two or three in the country."

Dr. Kaplan, writing on the University's current graduate student stipends, noted that they are competitive with those obtained elsewhere but no better. "I believe our stipends should exceed the national average, at least by as much as is required to compensate for the higher cost of living; they also ought to rise with the cost of living or to be indexed to some other indicator, such as graduate fellowships offered by NSERC or the provincial government.

"We ought to have a large number of prestigious graduate scholarships with stipends that exceed the normal by fifty percent at least," he continued. "These would be well advertised with attendant favorable publicity for our Graduate Faculty."

Dr. Kaplan strongly favors the

generating of a "truly exciting atmosphere of intellectual ferment and controversy on campus." Existing funds, for example, the Distinguished Visitors Fund, could be used to ensure that world leaders in all disciplines visit our campus and that graduate students have contact with them. The current (14 to 18 March) conference on "Canada, the World and the Future" is a step in this direction. As well, some of the 75th Anniversary events could be made annual, he suggests.

According to Dr. Kaplan, a vital action in building the research reputation of our University is to ensure that no chairman or dean be appointed who does not comprehend—and demonstrate his/her comprehension of—the importance of the research function of the University. "We may then be sure that all subsequent appointments will be made with this function clearly in mind."

Of all the ways in which a great research university becomes widely known, Dr. Kaplan contends, one stands out above all the others; this is the presence of stars—world-famous scientists, scholars and artists whose mere presence puts the university on the map. Another way of getting the kind of reputation that recruits excellent graduate students is the presence of people working in the most exciting and rapidly advancing frontier areas of scholarship and science, he writes. "Traditionally-oriented departments tend to avoid hiring young scholars and scientists in these exciting new areas. A new university formed *de novo* such as our younger sister in Calgary can avoid this syndrome and has done so in some fields where their reputation has come to exceed ours. The presidential reviews may furnish examples of this syndrome. Corrective action begins with recognition of the problem. The more brilliant graduate students will gravitate to the universities and departments engaged in this kind of frontier research."

Regarding the problem of teaching loads, Vice-President Kaplan believes that the McCalla Professorships and the Support in Aid of Scholarship Fund are "an imaginative initiative in the right direction. Very heavy teaching loads are not conducive to the achievement of excellence in research."

The planned development of an Office of Research Services to emphasize its role in technology transfer will also help attract graduate students to our applied science Faculties, including Agriculture and Forestry.

Acting Dean Woods points out that although the number of graduate students has increased, the proportion that attend The University of Alberta has decreased. One factor that makes it hard to relate research activity to numbers of graduate students, he says, is the growth in the number of non-thesis master's programs during the 1970s. At this University nearly half of the master's students are now registered in programs that do not require a thesis whereas in 1970 a great majority of the students were in thesis programs. (Statistical reports of the Canadian Association of Graduate Schools show that the social sciences and related disciplines which include business, education, journalism, library science, and administration studies is the only area of study that has had an increasing proportion of students during the period since 1972. These study areas include most of the non-thesis students.) At the same time as the non-thesis programs were being introduced, mainly in the early 1970s, the proportion of graduate students registered for part-time studies increased. In 1981-82 the number of part-time graduate students registered at The University of Alberta decreased in step with a national change but the reason for this drop is not clear nor is it clear whether it is a trend that will be continued.

In Dean Woods' words, the rate at which our students are completing their doctoral programs, which must all withstand the test of international standard referees, is an indication of the effectiveness of our research personnel. Since papers in international research journals result from almost every doctoral thesis, the quality of the work being done is, on the average, competitive with that from the best universities, he says.

"Some of the factors that would place us near the top of the Canadian universities in research reputation we may already possess; others may be beyond our control. History records that those Canadian universities which have more graduate students than The Uni-



versity of Alberta began to expand dramatically immediately after World War Two, consequently their academic staff are retiring in larger numbers now than is the case here where expansion occurred several years later. The other institutions, Dean Woods continues, have appointed young researchers with exemplary records to some of these positions in fewer than the last ten years. Some of these people are research leaders with international reputations, hence numbers of graduate students wish to work with them.

"The age distribution of our academic staff is such that vacancies are not occurring at a rate that makes it possible for us to compete for the best young research people. Without the stimulus of their presence and

activity The University of Alberta may lose research momentum that it needs if it is to join the best this century."

The Educational Affairs Committee has identified several suggestions for consideration including the providing of a certain number of prestigious and high-stipend graduate scholarships; the attracting of "bright stars" to the campus, either as Distinguished Visitors or as full-time academic staff; and the encouraging of the development of the full potential of the existing complement of academic staff. The committee views the report as an informational document that can be circulated and considered in the context of the ongoing process of overall University planning. □

## service information

All information to be included in this column must reach the Office of Community Relations by 9 a.m. the Thursday prior to publication.

### Coming Events

#### Lectures and Seminars

##### Limnology and Fisheries Discussion Group

24 March, noon. Bill Schmid, University of Minnesota, will present a seminar entitled "Sampling aquatic vegetation with the use of SCUBA." G217 Biological Sciences Building.

##### Faculty of Pharmacy and Pharmaceutical Sciences

18 March, 9 a.m. Vera C. Glocklin, Assistant Director for Pharmacology and Toxicology, Office of New Drug Evaluation in the Food and Drug Administration, Washington, will speak on "Toxicity in Drug Development." 165 Education South.

18 March, 10:30 a.m. Shabir Z. Masih, Vice-President, Reid-Provident Laboratories Inc., Atlanta, Georgia, will present a lecture on "Formulation of New Drugs." 165 Education South.

18 March, 1 p.m. Donald N. McGregor, Associate Director of Medicinal Chemistry Research, Bristol Laboratories in Syracuse, New York, will speak on "The Interdisciplinary Approach to Drug Development." 6069 Dentistry/Pharmacy Centre.

18 March, 2:30 p.m. P. Johnson, a specialist in patent law, will lecture on "Patents and Patenting." 6069 Dentistry/Pharmacy Centre.

##### Department of Art and Design

18 March, 2:30 p.m. Helena Fracchia will present a lecture entitled "Greek Wall-Painting of the Classical and Hellenistic Periods: A Review of the Evidence." 2-20 Fine Arts Building.

25 March, 2:30 p.m. A panel discussion chaired by Norman Yates on the topic "Graduate Studies in Art and Design." 2-20 Fine Arts Building.

##### Department of History

21 March, 3:05 p.m. John S. Brownlee, University of Toronto, will speak on "The Problem of History Textbooks in 20th Century Japan." 2-58 Tory Building.

23 March, 3:05 p.m. Daniel R. Woolf, Oxford University, will give a lecture entitled "Two Elizabeths? King James I and the Late Queen's Famous Memory." 2-58 Tory Building.

28 March, 3:05 p.m. A.W. Coats, University of Nottingham, will speak on "Economists and Post-War Government: Some International Comparisons." 2-58 Tory Building.

##### Department of Zoology

18 March, 3:30 p.m. Spiro Panagiotou, Department of Philosophy, McMaster University, will present a lecture entitled "Science, Ethics and Freedom." 345 Earth Sciences Building.

22 March, 12:30 p.m. Bill Schmid, University of Minnesota, will speak on "Water Balance and Amphibian Ecology." CW410 Biological Sciences Building. The following is a list of other lectures he will be presenting.

23 March, noon. "Variation in Amphibian Nitrogen Excretion and Urinary Bladder Structure/Function." CW410 Biological Sciences Building.

24 March, noon. "Sampling Aquatic Vegetation

with the Use of SCUBA." CW410 Biological Sciences Building.

25 March, noon. "Winter Ecology: Methods, Microclimate and Animal Ecology." CW410 Biological Sciences Building.

25 March, 3:30 p.m. John Chang will speak on "The Role of Catecholamines in Regulation of Gonadotropin Secretion in Goldfish--The Key to Induced Ovulation." CW410 Biological Sciences Building.

##### Chaplains' Association

19 March, 9 a.m. Frank Henderson, Cancer Research Unit, and Gordon Lathrop, newly elected Vice-President of the North American Academy of Liturgy, will jointly speak on "The Shape of the Liturgy: Lutherans and Roman Catholics at Worship" at St. Agnes Parish, 10826 - 62 Avenue. \$5 registration fee includes lunch. Co-sponsored by Lutheran Campus Ministry at The University of Alberta.

21 March, noon. Constance Parvey, Vancouver School of Theology and former World Council of Churches' staff member in Geneva, will speak on "What in the World is the World Council of Churches?" and screen a film. Newman Centre, St. Joseph's College.

21 March, 3 p.m. Dr. Parvey will present a lecture on "Sixty Minutes" and *Reader's Digest* Attack the World Council of Churches: A Rebuttal!" These presentations are sponsored by the U of A Chaplains' Association.

##### Faculty of Agriculture and Forestry and Department of Food Science

21 March, 11 a.m. Don Murray, Chairman, Food Science Department, University of Manitoba, will present a seminar entitled "Food Science and Educational and Research Programs at the University of Manitoba." 349 CAB.

21 March, 2 p.m. W.D. Powrie, Chairman, Food Science Department, University of British Columbia, will speak on "Food Science and Educational and Research Programs at the University of British Columbia." 349 CAB.

22 March, 10 a.m. "Where Do We Go From Here." An overview of food science in the 1980s with a round table discussion chaired by Dr. Powrie.

##### Department of Chemical Engineering

21 March, 3:30 p.m. J.H. Sinfelt, Senior Scientific Advisor, Exxon Research and Engineering Company, Linden, New Jersey, and the 1983 C-I-L Distinguished Visiting Lecturer, will speak on "Bimetallic Catalysts." 345 Chemical/Mineral Engineering Building. Please phone 432-3321 if you plan to attend.

22 March, 3:30 p.m. Dr. Sinfelt will speak on "Applications of Extended X-ray Absorption Fine Structure." 346 Chemical/Mineral Engineering Building. Please phone 432-3321 if you plan to attend.

##### Faculty of Nursing

21 March, 4:30 p.m. Sister Karin Dufault, Clinical Nurse Specialist and Nurse Researcher, Providence Medical Center, and Clinical Associate Professor, School of Nursing, Oregon Health Sciences University, will speak on "Hope in the Elderly: Nursing Research Findings." 3-101 Clinical Sciences Building.

##### Alberta Heritage Foundation for Medical Research

22 March, 9 a.m. James Sidbury, National Institute of Child Health and Human Development, Bethesda, Md., will present a lecture entitled "New Alternatives to the Treatment of Type I Glycogen Storage Disease." 2-115 Clinical Sciences Building. Sponsored by the Department of Pediatrics.

23 March, 4 p.m. Michael O'Shea, Associate Professor, Departments of Physiology and Pharmacology, University of Chicago, will lecture on "Peptide Co-Transmitter at a Neuromuscular Junction." M145 Biological Sciences Building.

##### Comparative Literature

22 March, 11 a.m. John Woods, University of Lethbridge, will give a public lecture entitled "Is There Logic in Fiction?" Senate Chamber, Arts Building.

##### Department of Slavic and East European Studies

22 March, 3:30 p.m. C. Dimic will speak on "Ivo Andric: Author at the Cross Roads of Three Cultures." 311 Athabasca Hall.

28 March, 10 a.m. M. Mace, Head of the Soviet Section, East European Division, Department of External Affairs, will present a lecture entitled "The Soviet Perception of National Security." 3-65 Tory Building.

29 March, 3:30 p.m. Mr. Mace will present a seminar on "Canada--Soviet Relations." 311 Athabasca Hall.

##### Department of Botany

23 March, 3:30 p.m. Sean McNicholas will speak on "Some Aspects of Blue-Green Algal Toxins." M-137 Biological Sciences Building.

30 March, 3:30 p.m. Ahmad Hegazy will present a seminar entitled "Variation of Internal Structure, Rooting Characteristics and Chemical Composition of Some Xerophytes." M-137 Biological Sciences Building.

##### Department of English

24 March, 3:30 p.m. Nils Clausson will speak on "Past and Present in *Coningsby* and *Sybil*." 5-20 Humanities Centre.

28 March, 4 p.m. W.G. Watson will present a lecture entitled "Lawrence's *Virgin and the Gypsy*: Desire, Deconstruction, and the Scapegoat." 5-20 Humanities Centre.

##### Department of Sociology

24 March, 3:30 p.m. Detmar Tschofen, University of Oregon, will present a lecture on "Darwin and the Beagle: Darwin on Society and Culture, a Practical Critique in the Sociology of Knowledge." 5-15 Tory Building.

31 March, 3:30 p.m. Satyashu Mukherjee, Australian Institute of Criminology, will speak on "Crime and the Women's Movement." 5-15 Tory Building.

##### Faculty of Nursing and Departments of Anthropology and Sociology

24 March, 4:30 p.m. Barbara Kewesky-Halpern, Professor of Anthropology, University of Massachusetts, will present a lecture entitled "Talk, Trust and Touch in Traditional Healing." 1315 University Hospital.

### Science Dining Club

24 March, 6 p.m. D.A. Craig, Department of Entomology, will speak on "Pacific Black Flies or a Polynesian No-No." For reservations, please phone Donna Arbuthnott at 432-5072. Guests are welcome. Saskatchewan Room, Faculty Club

### Department of Family Studies

25 March, noon. Norah Keating will present a brown bag seminar on "Policies for the Aging Population in England." 814 General Services Building.

### Department of Philosophy

25 March, 3 p.m. Alan R. White, University of Hull, will present a lecture on "The Grounds of Rights." L-2 Humanities Centre.

### Department of Agricultural Engineering

28 March, 3 p.m. Ray Hoensen, Industrial Technology Centre, Manitoba Research Council, will speak on "Computer-Aided Engineering Concepts for Modern Manufacturing." 2-3 Mechanical Engineering Building.

### Department of Anthropology

31 March, 3:30 p.m. M. Jackes, Research Associate, will speak on "An Osteologist's View of 17th Century Smallpox: Europe and North America." 14-6 Tory Building.

### Music

#### Department of Music

17 March, 8 p.m. The University of Alberta Madrigal Singers Spring Concert—Leonard Ratzlaff, conductor

18 March, 5 p.m. A junior student recital with Elizabeth Turnbull, mezzo-soprano. Convocation Hall.

18 March, 8 p.m. A senior student recital with Milton Schlosser on the piano. Convocation Hall.

19 March, 2 p.m. A non-compulsory student recital featuring Julie Heroux on the piano. Convocation Hall.

19 March, 5 p.m. A junior student recital with Viola Wallbank, soprano. Convocation Hall.

19 March, 8 p.m. A senior student recital with Patricia Swan, soprano. Convocation Hall.

20 March, 8 p.m. The University of Alberta Symphonic Wind Ensemble—Fordyce Pier, director. Convocation Hall.

21 March, 8 p.m. A senior student recital with Heather Walker on the piano. Convocation Hall.

22 March, 5 p.m. A junior student recital with Elizabeth Lietz on the piano. Convocation Hall.

23 March, 8 p.m. Art Song Recital with students from the Art Song Interpretation Class of Alexandra Munn. Convocation Hall

24 March, 5 p.m. A junior student recital with pianist Corinne Cherry. Convocation Hall.

24 March, 8 p.m. Alexander Tumanov, baritone; Ernesto Lejano, piano, harpsichord; Lawrence Fisher, violin; Regula Qureshi, cello. With guest artists Leslie Allison, soprano; and Paul Lorieau, tenor. Convocation Hall.

25 March, 5 p.m. A junior student recital with Sanna Boehm on the piano. Convocation Hall.

25 March, 8 p.m. A senior student recital featuring Marguerite Puik on the piano. Convocation Hall.

### Exhibitions

21 March to 15 April. "Five Portfolios—Six Artists." This exhibition is drawn from the print collection of the National Gallery of Canada and offers a unique opportunity for Albertans to view five diverse international print portfolios collected during the 1970s. Ring House Gallery.

### 75th Anniversary Events

*The Brahms Library Display.* To coincide with the 150th anniversary of the birth of Johannes Brahms, materials relating to the works and life of the composer. Rutherford Library Galleria.

Until 31 March. The Humanities and Social Sciences Library will highlight publications by members of the Department of Romance Languages in a display across from the Circulation Desk.

18 and 19 March. Writers-in-Residence—Prose Fiction. Matt Cohen, Marian Engel, Elizabeth Smart, Katherine Govier, and Greg Hollingshead. For further information, call 432-2325.

18 to 20 March. Faculty Open Houses: Education, Faculte Saint-Jean, and Physical Education and Recreation.

18, 19, and 20 March. Faculty of Education Open House. 18 March—6 to 10 p.m.; 19 March—10 a.m. to 5 p.m.; and 20 March, 2 to 5 p.m. The Open House will be officially launched on 18 March at 7 p.m. by Dean Worth; the program will feature a topical address on Canadian education by M. Horowitz.

18 to 20 March. Winter National Diving Championships (Pre-Universiade event). Kinsmen Aquatic Centre.

### Films

*Department of Romance Languages Wednesdays.* 3 p.m. The Italian Area of the Department of Romance Languages presents a series of films in Italian (without subtitles). For information, contact M. Verdicchio at 432-2003. rts 17.

### Department of Germanic Languages

23 March, 7:30 p.m. "Tannhauser" (1978). Arts 17.

### Radio and Television

#### Radio

Programs broadcast on CKUA radio 580 AM and 94.9 FM.

18 March, 8 p.m. Voiceprint—"Italian Language and Literature."

19 March, 7 p.m. University Concert Hall—Concerts, recitals, and interviews with faculty and special guests of the Department of Music.

23 March, 7 p.m. Behind the Curtain—"Pity and Terror" written by Russell Mulvey.

23 March, 7:30 p.m. Extensions—"Instructors in the Faculty of Extension discuss their subject areas."

23 March, 7:45 p.m. Perspectives—Issues underlying current events examined in lively debate format.

25 March, 8 p.m. Voiceprint - "The Politics of Language and Political Writers "

#### Television

Programs broadcast on Q-9 and C-13.

21 March, 9 p.m. Explorations: Egyptian Mummy—"The University's Ring House Gallery-exhibited Mummy and the study of it."

23 March, 9 p.m. Faculty Profiles—Faculty of Education—"Teaching the Teachers Part II."

24 March, 9 p.m. Out Comes the Sun—"Features the Glenrose Hospital program dealing with handicapped children."

### Matters of Faith

Lutheran Campus Ministry Worship each Sunday at 10:30 a.m. in the Newman Centre, the west basement of St. Joseph's College. All are welcome

### SUB Theatre

#### Films

17 March, 8 p.m. "Absence of Malice" (1981)

21 March, 8 p.m. The Edmonton Film Society presents Arthur Penn's "Four Friends." This is the last film in the International Series. Tickets at SU Box Office, Woodward's, and at the door.

23 March, 8 p.m. "The Missionary" (1982).

24 March, 8 p.m. "Airplane II" (1982).

25 March, 8 p.m. "Fast Times at Ridgemont High" (1982).

28 March, 8 p.m. "Creepshow" (1982).

29 March, 8 p.m. "On Golden Pond" (1982).

#### Music

19 and 20 March, 2:30 p.m. Zirka Cynk Dancers of Edmonton. For tickets and more information, call 469-4871, 466-3893, or 466-0660. SUB Theatre.

26 March, 8 p.m. The Chinese Students' Association presents a Variety Show. For more information, contact Margaret Yiu at 433-3530.

#### Studio Theatre

17 March to 2 April, 8 p.m. "The Deer and the Antelope Play." For tickets, phone 432-2495.

## Non-Credit Courses

### Computing Services

#### Client Training Sessions

Computing Services is taking registrations between 8:30 a.m. and noon for the following non-credit courses. Please phone 432-2261 first to confirm the dates. Payment is required in advance and clients who do not cancel two business days in advance will be charged. Contact Carey, Training Assistant, at 432-2261 or in 323 General Services Building for more information.

### Introduction to MTS and File Editing for Advanced Users

Course number: 939. Date: 14, 17 March. Time: 9 to 11 a.m. Fee: \$15. Prerequisites: None. Place: 315/351 GSB.

### MTS and Editor Fundamentals

Course number: 892. Date: 16, 18 March. Time: 11 a.m. to 1 p.m. Fee: \$15. Prerequisites: "Introduction to Computing" or equivalent working knowledge of a DECwriter terminal and the MTS system. Place: 351 GSB.

### AJ510 Operation and Visual Editing

Course number: 905. Date: 15, 17 March. Time: 11 a.m. to 1 p.m. Fee: \$15. Prerequisites: "MTS and Editor Fundamentals" and a good working knowledge of the File Editor. Place: 357 GSB.

### Introduction to Text Formatting

Course number: 934. Date: 14, 16, 18, 21, 23, 25 March. Time: Noon to 2 p.m. Fee: \$25. Prerequisites: "MTS and Editor Fundamentals," "MTS Overview," and a good working knowledge of the File Editor. Place: 315/351 GSB.

### AJ510 Operation and Visual Editing

Course number: 986. Date: 15, 17 March. Time: 7 to 9 p.m. Fee: \$15. Prerequisites: "MTS and Editor Fundamentals" and a good working knowledge of the File Editor. Place: 357 GSB.

### Faculty of Extension

### Division of Urban and Rural Planning

For further information on the courses listed below, call 432-2912.

### An Introduction to Regional Planning

Date: 28 and 29 March. Fee: \$125.

### Business, Industrial and Professional Division

For further information on the courses listed below, call 432-5066 or 432-5067.

### The Integrated Office (Combining Word and Data Processing for Productivity Improvement)

Date: 5 April. Fee: \$275.

### Stocks, Bonds and Other Investments

Date: 30 and 31 March. Fee: \$125.

### Organizational Climate

Date: 7 and 8 April. Fee: \$165.

### Conflict Management, Mediation and Resolution: A Management Approach

Date: 11 and 12 April. Fee: \$275.

### The Art of Negotiating . . . With Anyone

Date: 14 and 15 April. Fee: \$275.

### Field Trips

For further information on the courses listed below, call 432-5061.

#### **Bamfield Marine Station Field Trip**

Date: Orientation, 28 March. Fee: \$200.

#### **Mountain Hazards: Bears and Avalanches**

Date: 6 April to 3 May. Fee: \$30.

### **Applied Behavioral Sciences Division**

For further information on the courses listed below, call 432-5069.

#### **Assertion and Interpersonal Skills Training—Level I, Section D**

Date: 17 and 18 March. Fee: \$75.

#### **Creative and Non-Verbal Techniques in Family**

Date: 18 to 20 March. Fee: \$100.

#### **Stress Management for Everyday Living—Section B**

Date: 18 and 19 March. Fee: \$40.

#### **Release Your Brakes**

Date: 24 and 25 March. Fee: \$85.

#### **Organization Effectiveness:**

##### **A Systems Approach**

Date: 7 and 8 April. Fee: \$45.

#### **Management Studies for Women**

For further information on the courses listed below, call 432-2230.

#### **Cost Effective Office Management**

Date: 12 and 13 April. Fee: \$165.

### **Real Estate Division**

For further information on the courses listed below, call 432-5060.

#### **Tactics, Techniques and Strategies in Real Estate Negotiations**

Date: 8 April. Fee: \$110.

#### **Foreign Investment in California Real Estate: Legal and Tax Strategy for the Non-resident Investor**

Date: 11 April. Fee: \$110.

#### **Investment Analysis—The Mathematics of Yield Measurement, Property Valuation and Ranking of Investment Alternatives**

Date: 15 April. Fee: \$95.

#### **Management of Income Property**

Date: 22 and 23 April. Fee: \$175.

#### **How to Survive, Compete, Expand and Make a Profit with Your Own Real Estate Company in the 1980s**

Date: 28 and 29 April. Fee: \$175.

#### **Starting Your Own Building and Development Company**

Date: 6 May. Fee: \$110.

#### **Sales and Acquisition—How to Avoid Making Costly Errors**

Date: 11 May. Fee: \$95.

#### **Increasing Your Sales Potential**

Date: 13 May. Fee: \$110.

#### **Second Mortgages: Investment for the 1980s**

Date: 18 May. Fee: \$95.

### **Fitness and Lifestyle Courses**

The Faculty of Extension is now offering Spring and Summer fitness programs. Some of the courses starting in April are:

Fitness for Superfits  
Fitness for Unfits  
From Fat to Fit  
Aerobic Dance Plus  
Fitness for Nurses  
The Incredible Machine

Tai Chi  
Co-Ed Fitness  
Fitness for Men  
Fitness for Women  
Relaxercise

If you would like further information on these courses, please call the Faculty of Extension at 432-2015 for a brochure.

### **Courses in Microelectronics**

For further information on the courses listed below, call 432-3914.

#### **Microprocessor Interfacing**

Date: 5 to 28 April. Time: 6 to 9:30 p.m.

#### **Microprocessor Project**

Date: 3 to 27 May. Time: 6 to 9:30 p.m.

## **Notices**

### **Conference Funds Committee**

The Conference Fund of the University is intended for the financial support of conferences, conventions, and symposia of an academic nature (as distinct from visiting lectureships) held in the province and sponsored or hosted by the University or its students or student organizations. The Fund is administered by a Conference Funds Committee of General Faculties Council and is the only fund in the University for this purpose.

All applications for grants should be submitted to the Chairman of the Committee. Special application forms are available, along with related information sheets. The current Chairman is Dr. J.M. Kirman, Department of Elementary Education, 248 Education South, telephone 432-5093.

### **Alberta Advisory Committee for Educational Studies**

The Alberta Advisory Committee for Educational Studies (AACES) invites applications for grants to support descriptive or experimental studies in education. Grants in excess of \$3,000 are awarded only rarely because of limited available resources. Grants cannot be given for travel unrelated to the proposed research project, nor for re-

search which is part of graduate studies.

Application forms may be obtained from and should be returned to Mrs. Corrie Marles, 1310 Education Tower, The University of Calgary, Calgary, Alberta T2N 1N4.

Completed applications received by 22 April will be considered at the spring meeting of AACES.

### **Environmental Reports Donated**

Interprovincial Pipe Line (NW) Ltd. has donated fourteen environmental reports to the Boreal Institute for Northern Studies Library. This set of reports focuses on the Norman Wells Pipeline currently under construction between Norman Wells, Northwest Territories, and Zama, Alberta.

### **Jeff Turner to Retire**

Jeff Turner, Associate Librarian, will retire this spring after nineteen years of service with The University of Alberta Library. Mr. Turner will be honored at an informal reception in the Upper Lounge of the Faculty Club on Wednesday, 27 April, from 3 to 6 p.m. Staff, friends, and acquaintances are invited to join him on this occasion and to wish him well on his retirement.

Anyone wishing to contribute toward a retirement gift may do so by sending a cheque made payable to the *G. Turner Retirement Fund* addressed to: Mrs. Shirley Meyer, 5-12 Cameron Library.

## **Positions Vacant**

*The University of Alberta is an equal opportunity employer but, in accordance with Canadian Immigration requirements, these advertisements are directed to Canadian citizens and permanent residences.*

### **Non-Academic Positions**

*To obtain further information on the following positions, please contact Personnel Services and Staff Relations, 2-40 Assiniboia Hall, telephone 432-5201. As positions are filled on an on-going basis, these vacancies cannot be guaranteed beyond 11 March 1983. For a more up-to-date listing, please consult the weekly Employment Opportunities Bulletin and/or the postings in P.S.S.R.*

Library Assistant II (\$1,373-\$1,682) Faculté Saint-Jean

Programmable Typewriter Operator III (\$1,373-\$1,682) Secretariat

Departmental/Executive Secretary (Term) (\$1,548-\$1,908) Housing and Food Services Technician I (Trust, Term) (\$1,426-\$1,754) Home Economics

Chemistry Technician I (Trust, Part-Time) (\$713-\$877) Chemistry

Editorial Assistant (Trust) (\$1,682-\$2,078) Extension-Legal Resource Centre

Applications Analyst (\$1,754-\$2,171) Office of the Registrar

Console Operator (\$1,908-\$2,368) Computing Services

Programmer/Analyst II (Trust) (\$2,472-\$2,581) Computer Engineering

Programmer/Analyst III (Trust)

(\$2,472-\$3,085) Computing Science

Programmer/Analyst III (\$2,472-\$3,085) Computing Services

For vacant library positions, please contact the Library Personnel Office, 5th floor, Cameron Library, phone 432-3339.

## **Advertisements**

*Advertisements must reach the Editor by 3 p.m. on the Thursday prior to publication date which date also serves as the deadline for cancellation of advertisements. The cost of placing advertisements is 30 cents per word with no discount for subsequent insertions. There are no refunds. There is a maximum limit of thirty words and a minimum charge of \$1.50. Contributors' corrections will be assessed at \$1.50 for each line in which an insertion is made. Advertisements cannot be accepted over the telephone.*

### **Accommodations available**

Forced to sell - House, 11155-72 Ave 1 1/2 storey, revenue potential, 1,350 sq. ft., five bedrooms, two baths, remodelled kitchen, new heated garage, landscaped. Terms available. Offers to \$85,000. Michael 1-243-6220.

For rent - Fully furnished, four bedroom convenient, Bluequill home. August '83 - July '84. 432-5979, 436-9302.

For rent - Large, furnished or unfurnished, five bedroom home (October 1983 or earlier to July 1984). 432-5106, 487-3415.

Sabbatical house - Greenfield. Aug. 1983-84. Fully furnished, three bedrooms, finished basement, double detached garage, quiet neighborhood, half block from bus pick-up. \$800/month. Call 436-6566.

For rent - Professor's furnished, four bedroom home, July 1983-84 Easy access to University, schools, shopping. 432-2004, 436-6761.

For rent - Five bedroom, furnished house Lendrum. Garage, fenced, \$900 Available 1 May. 434-1203

For rent - Two bedroom house, University area. 437-0458 evenings.

Sleeping room - Male graduate student. Non-smoker, quiet home, private entrance, near Lister Hall. 439-1793.

For rent - August 1983 - June 1984. Furnished, three bedroom bungalow. Duggan. 436-6606.

For rent - Four bedroom house, 25 June 1983 - mid-Aug. 1984. Aspen Gardens. Bus direct to University. Westbrook elementary school 432-3862, 435-1467 evenings.

For sale - Inglewood home. \$69,900. Three bedrooms, two storey, hardwood floors, recently refinished, ten minutes to University/downtown. 455-2947 evenings.

For sale - Renovated, Belgravia bungalow (immaculate). Charming kitchen (all appliances), sparkling bathrooms, appealing, quiet avenue. DeAnna Larson 481-0936, 436-5250. Spencer's.

For sale - By owner. North Windsor Park. Immaculate bungalow in quiet location, one block from University. New carpets, rumpus room in basement, double garage, mature trees. 433-6795

Sublet - May-Sept. Two bedroom, semi-furnished, corner suite. Good view, two blocks University, pool, tennis, sauna, utilities included. \$500. Parking. 439-9587 after 5 p.m.

Sublet - May to August. College Plaza I. One bedroom apartment, furnished or unfurnished. Prof. Schrader 432-4578, 439-9625 res.

For rent - 1 July for 14 months. Mafmo, fully furnished, three bedroom bungalow. \$750/month. 436-9907, 432-5420.

For rent - Furnished, one bedroom apartment, Spruce Grove, May - September. 962-8603.

For sale - By owner. Attractively renovated, older, semi-bungalow, near University. 1,120 sq. ft. \$82,000. No agents. 432-7162.

Renting now - Furnished, bachelor suite, near University. Non-smoker. 435-6876.

#### Accommodations wanted

Wanted to rent by professional geologist and family. Two or three bedroom house in University area. 439-1055 after 6 p.m.

#### Goods for sale

English oak furniture. Six Cromwellian type dining chairs with hide seats. Oval drop leaf dining table with Jacobean legs and carved top. Buffet. Combined bookcase and bureau. Tea trolley. 433-9814.

Heintzman piano, four years old, \$2,250. Colombian refectory table, 8', \$400. Lissen speakers \$500. Two old stoves, electric, \$50; gas, \$25. Oak desk, \$50. 474-6671 after 7 p.m.

#### Services

Donnic Word Processing. Specializing in theses, manuscripts, etc. 8315A-105 St. 432-1419.

Singing teacher, Eileen Turner 439-4661.

Sailing: Learn to sail in B.C.'s beautiful Gulf

Islands. Basic Coastal Cruising, Advanced Coastal Cruising, Flotilla and Skipped Charters. Now booking for 1983. Alberta Yachts 426-4372.

Spring will soon be here. Bring in an idea, picture, or pattern and walk out with a garment that's yours alone. Alterations, too. Shirley De-Champlain 10620-126 St. 454-7048 appointment only.

Whiplash injuries? Spine specialist Marie Krieg, University trained in Duesseldorf, relieves backaches and tension using heat, medical massages, chirogymnastics and interferential electrotherapy. Maria Krieg Physiotherapy 436-8059.

American Tax Returns - Eberlein Consulting. 434-0563.

Professional typist - Word processing. Specializing in theses and dissertations. Gwen 467-9064.

Custom dressmaking and design. European trained. Call Jaqueline 433-4870.

Take French courses at Ecole Alliance Française. Spring session. 18 April - 15 June. 435-2260.

New Zealand nanny needs job. Five years experience, references. Phone Gay 433-8201.

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# ATTENTION

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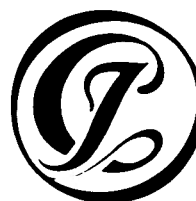
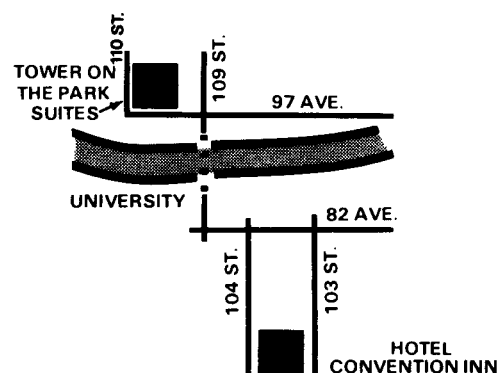
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